

d. Amendments to Claims

1. (currently amended) A process for assigning frequency channels to communications in a cellular wireless system, comprising:

performing a simulation of the system to produce a plurality of lists of channel rankings, the simulation evolving the lists of channel rankings according to an algorithm that dynamically reduces inter-communication interference, the lists of channel rankings prioritizing the channels to service communications by associated base stations; and

sending the lists of channel rankings to the associated base stations, the base stations being configured to assign channels to service communications with mobile units based on the channel rankings in the associated lists of channel rankings; and

wherein the sending includes updating the lists of channel rankings in response to receiving new input data from the base stations.

2. (original) The process of claim 1, wherein the evolving is constrained to produce less than a preselected amount of call blocking and/or call dropping.

3. (original) The process of claim 1, wherein one of the produced lists of channel rankings separately ranks the channels for separate angular sectors of the associated base station.

4. (original) The process of claim 3, wherein the performing includes producing a list that serially ranks the channels for usage in servicing wireless communications.

5. (original) The process of claim 4, wherein the performing comprises:
identifying the produced lists of channel rankings in response to determining that the performing is converging to a fixed point for evolution of the lists of channel rankings.

6. (previously presented) The process of claim 5, wherein the performing comprises:

determining quantities that characterize communications serviced by one of the

angular sectors, each of the quantities being indicative of potential inter-call interference for calls serviced by an associated one of the frequency channels; and

re-ranking the list of frequency channels associated with the one of the angular sectors based on the determined quantities.

7. (original) The process of claim 5, wherein the performing comprises:
providing a fading matrix for the system; and
wherein the performing includes assigning new calls to base stations based in part on the fading matrix.

8. (original) The process of claim 5, further comprising:
providing input data on locations of base stations and distributions of mobile units; and
wherein the performing is based in part on the provided input data.

9. (original) The process of claim 5, wherein the performing includes simulating redialing of blocked calls.

10. (original) The process of claim 5, wherein the performing includes simulating maintenance processing of calls based on associated power levels.

11. (original) The process of claim 5, wherein the performing includes assigning new calls according to a time division-multiplexing scheme.

12. (previously presented) The process of claim 5, further comprising:
servicing new calls in the base stations based on priorities derived from the sent lists of channel rankings.

13. (original) The process of claim 5, wherein the algorithm lowers interference based solely on uplink communications.

14. (original) The process of claim 5, wherein the algorithm lowers interference based solely on downlink communications.

15 – 23. (canceled)

24. (previously presented) A channel allocation system for ranking frequency channels for usage by base stations of a cellular wireless system, comprising:

a processor configured to dynamically simulate the cellular wireless system according to an algorithm that dynamically produces lists of frequency channel rankings for the individual base stations in a manner that reduces inter-call interference; and

a link coupling the processor to the base stations, the link supporting transmissions to the processor of input data from the base stations and transmissions of the produced lists of frequency channel rankings to the base stations, the processor being configured to use the input data to determine a starting state for the dynamical simulation and being configured to transmit the produced lists to the base stations in response to receiving the input data.

25. (canceled)

26. (original) The allocation system of claim 24, wherein the processor is configured to produce separate lists that rank the frequency channels for use in separate angular sectors of at least one of the base stations in assigning channels to support communications.

27. (previously presented) The allocation system of claim 26, further comprising:
a plurality of base stations, each base station having a data storage device configured to store one of the produced lists received from the processor.

28. (original) The allocation system of claim 26, wherein the processor is configured to perform the dynamical simulation based on an event queue containing events for simulating processing of communications with mobile units.

29 - 33. (canceled)